

## BALL GRID ARRAY SUBSTRATE STRIP WITH WARPAGE-PREVENTIVE LINKAGE STRUCTURE

### ABSTRACT OF THE DISCLOSURE

5 A substrate strip with warpage-preventive linkage structure is proposed for BGA  
(Ball Grid Array) application. The proposed substrate strip is composed of a series of sub-  
strates, each being used for the construction of an individual unit of BGA package, and  
which is characterized by the provision of a warpage-preventive linkage structure, by which  
each substrate on the substrate strip is supported by means of no more than two tie bars, i.e.,  
either by a two-point linkage structure or a one-point linkage structure in contrast to the  
10 four-point linkage structure utilized by the prior art. During high-temperature fabrication  
steps when the substrate is subjected to thermal stresses, the substrate can freely expanded  
toward the corners where no tie bars are provided; and consequently, it can be unwarped by  
the thermal stresses. This unwarped substrate allows the subsequently implanted ball grid  
array thereon to have high coplanarity.

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